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EXAMINER

BELLINGER, JASON R

ART UNIT

PAPER NUMBER

3617

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/812,140	Applicant(s) PASSAROTTO, MAURIZIO	
	Examiner Jason R. Bellinger	Art Unit 3617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) 7, 11-15, 26, 27, 32, 33, 35, 37, 38, 44-48 and 52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-10, 16-25, 28-31, 39-43, 49-51 and 53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/29/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Election/Restrictions

1. Applicant's election of species a(i), drawn to Figures 2-3, in the reply filed on 3 October 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Claims 11-15, 26-27, 32-33, 35, 37-38, and 44-48 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 3 October 2005 (for the reasons set forth above).

Furthermore, it should be noted that claims 7 and 52 are drawn to non-elected species of the invention, and are therefore also withdrawn from consideration.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the spokes of each spoke group, when viewed in the direction of the wheel's axis, have an arrangement that is specular (mirror image) with respect to a radial plane of symmetry, as set forth in claim 41; and the spokes connecting the first and second portions of the hub to the rim having identical angular positions, as set forth in claim 51, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 1, 20, 34, and 36 are objected to because of the following informalities: The term --and-- should be inserted after the term "axis" in line 2 of claim 1 for grammatical clarity.

The term "to" should be replaced with the term --with-- in line 2 of claim 20 for grammatical clarity.

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The numerals "4" and "14" should be replaced with the terms --four-- and --fourteen--, respectively in claims 34 and 36, to not confuse these limitations with reference characters of claim numerals.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

6. Claims 1-6, 8-10, 16-25, 28-31, 34, 36, 40, 42, 51, and 53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 40 are indefinite due to the fact that it is unclear what is being claimed in the last two lines of the claim. It is unclear what elements of the invention do not have a spoke of "the other set" interposed therebetween.

Claim 8 is indefinite due to the fact that it is unclear which "set of spokes" is being referred to by the claim. Reference characters cannot be relied upon to positively describe the invention.

Claim 10 is indefinite due to the fact that it is unclear which "spoke pair" is being referred to in the claim. Reference characters cannot be relied upon to positively describe the invention.

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Claim 42 is indefinite due to the fact that it is unclear what element of the invention includes a "center". It is further unclear which set of spokes is being referred to by the phrase "two sets".

Claim 51 is indefinite due to the fact that it is unclear what element of the invention is used as the reference point to determine that the two sets of spokes have identical angular positions. It is unclear what element of the invention the two sets of spokes have identical angular positions relative to.

Claim 53 is indefinite due to the fact that it is unclear what is actually being claimed.

7. The term "close" in claims 2 and 10 is a relative term, which renders the claim indefinite. The term "close" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. In this case, no qualitative or quantitative limitations have been provided to define how "close" the rim attachments points of the spoke pairs are.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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9. Claims 1-2, 8-10, 16-20, 22-23, 25, 28-30, 39-40, 42, and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by House, Jr. As best understood, House, Jr. shows a spokes wheel having a rim 11, and a hub 10 defining an axis, and having first and second anchoring portions for anchoring a plurality of spokes (13-15). The spokes (13-15) connect the rim 11 to the hub 10, and include a first set of spokes 14 connected to the first anchoring portion of the hub 10 and a second set of spokes 15 connected to the second anchoring portion of the hub 10. At least two spokes of the first set 14 are grouped together to form a pair of spokes 14. No spoke of the second set 15 is interposed.

The attachment points of the spoke pair 14 are "close" to one another. The spoke pairs 14 are angularly spaced from one another. At least two spokes of the second set of spokes 15 are grouped into pairs (namely adjacent spokes 15 can be considered to be a spoke pair). The attachment points of the second spoke pair 15 are "close" to one another. The attachment points of the spoke pair 14 define a distance that is smaller than the maximum diameter of the hub 10. The number of the first spoke set 14 is greater than that of the second spoke set 15; there being twice the number of first spokes 14 than second spokes 15 (see column 3, lines 3-5). The spokes 15 of the second set are single spokes. These spokes 15 are angularly interposed with the spokes of the first set 14.

The tension of the first spoke set 14 is substantially balanced with the tension of the second spoke set 15 in the axial direction of the wheel. The first spoke set 14 is inclined at an angle 18 with respect to a median plane 16 of the wheel, and is smaller

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than the inclination angle 17 of the second spoke set 15. The spoke pairs of the first set 14 are arranged equal distances apart; while the single spokes 15 of the second set are also evenly spaced apart, and is equidistant between two adjacent spoke pairs 14 of the first set. The wheel could function as a rear wheel.

The first 14 and second 15 sets of spokes produce generally equal forces in opposite directions along the axis of the wheel in order to maintain the rim 11 to be centered about a median plane of the wheel (which would be defined through the axial center point of the rim 11). The spokes (13-14) connecting the first portion of the hub 10 to the rim 11 alternate between single spokes 13 and spoke pairs 14.

Each set of first spokes (13-14) includes a spoke 13 that when viewed in the direction of the wheel's axis is set at the center between two adjacent sets of spokes 14, in a radial plane of symmetry.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 3-5 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over House, Jr. House, Jr. contains all of the limitations as set forth in paragraph 9 above, but does not specify the relation of the distance between the attachment points of the spoke pair to the pitch of a conventional wheel having the same number of

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spokes. It would have been obvious to one of ordinary skill in the art at the time of the invention to mount the paired spokes at rim attachment points having a distance that is less than or equal to 60, 40, or 25% of the pitch of a conventional wheel having the same total number of spokes, as a mechanical expedient in order to properly balance the wheel.

While not stated, the sum of the tensile forces of the first spoke set 14 with respect to the sum of the tensile forces of the second spoke set 15 could be in a ratio equal to the inverse ratio ($\sin \text{angle } 17 / \sin \text{angle } 18$) in order to balance the forces exerted on the wheel, thus preventing the wheel from failing during operation.

12. Claims 6, 21, 34, 36, 41, 43, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over House, Jr. as applied to claims 1-5, 8-10, 16-20, 22-25, 28-30, 39-40, and 53 above, and further in view of Krampera ('853 A1). House, Jr. does not show the attachment points of the spoke pair having a distance that approaches zero.

In Figure 6, Krampera teaches the use of a wheel having spoke pairs (the solid spokes) with rim attachment points having a distance that is approaching zero.

Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the spoke pairs of House, Jr. in the manner taught by Krampera as a mechanical expedient, dependent upon the type of forces the spokes are meant to absorb.

In figure 5, Krampera teaches the use of spokes of the second set (the phantom spokes), which all extend radially from the axis of the wheel, and which have an

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identical angular position with the first spokes (the solid spokes). Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the second spoke set of House, Jr. in the manner taught by Krampera as a mechanical expedient, dependent upon the type of forces the spokes are meant to absorb.

Krampera further teaches in Figure 6, the use of a wheel having the spoke pairs of a first set (the solid spokes) being between four and fourteen (in this case eight). The single spokes (the phantom spokes) number between four and fourteen (in this case eight). Furthermore, the spokes of each group are "specular" with respect to a radial plane of symmetry when viewed in the direction of the wheel's axis. Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to arrange the spoke pairs and single spokes of House, Jr. in the manner taught by Krampera in order to provide a force-balanced wheel.

13. Claims 31 and 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over House, Jr. as applied to claims 1-5, 8-10, 16-20, 22-25, 28-30, 39-40, and 53 above, and further in view of Levedahl and in further view of Krampera ('853 A1). House, Jr. does not show the wheel having a sprocket cassette mounted thereon.

Levedahl teaches the use of a spoke wheel having a sprocket cassette D mounted thereon. Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the wheel of House, Jr. with a sprocket cassette in order to allow the wheel to be a drive wheel.

Figure 3 of Krampera teaches the use of a wheel having a sprocket cassette mounted on the side of the hub having twice as many spokes as the opposite side of the hub. Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the sprocket cassette taught by Levedahl on the side of the hub of House, Jr. having twice the number of spokes in order to balance the wheel, since the hub portion having double the number spokes would be able to support a higher tensile load than the hub portion having less spokes.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references are considered to show wheel having different number of spokes on opposite sides of the hub. For example, Hunt shows a wheel of the type described above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason R. Bellinger whose telephone number is 571-272-6680. The examiner can normally be reached on Mon - Thurs (9:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Morano can be reached on 571-272-6684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason R Bellinger
Examiner
Art Unit 3617

JASON R. BELLINGER
PATENT EXAMINER

jrb *JRB*
10/28/05